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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,730

09/30/2004

Soshu Kiriara

M1071.1920

9942

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03/04/2009

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EXAMINER

BALDWIN, GORDON

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

03/04/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/509,730	<b>Applicant(s)</b> KIRIHARA ET AL.	
	<b>Examiner</b> GORDON R. BALDWIN	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, and 9-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-6, 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Komiyama (U.S. Pat. No. 4,774,129).**

**Consider claims 1, 6 and 12,** Komiyama discloses a porous three-dimensional dielectric structure having micropores with a metal film being disposed on the surface of the porous dielectric structure. (Col. 2 lines 32-46) Komiyama also discloses that the metal layer may be Cu or Ni. (Col. 4 lines 35-40) This metal film can be applied so that it is a discontinuous metal film. (Col. 2 lines 35-46; Col. 3 lines 61-65; Col. 4 lines 3-12; Col. 8 lines 1-10) Regarding the second substance with a different dielectric constant, since that substance is air, the pores of Komiyama are considered to disclose air contained in the three dimensional space, next to the metal oxides or nitrides in the dielectric base. (Col. 4 lines 12-25)

**Consider claims 2, 3 and 9,** Komiyama discloses the claimed structure with the same materials, therefore the resistivity and conductivity is also considered to be taught, because the same structure with the same materials would produce similar characteristics, such as resistivity and conductivity.

**Consider claims 4, 5 and 10-11**, the term “electroless plating film” is considered to be a product by process limitation, especially since the applicant states in the specification in paragraph 58 that CVD and sputtering can also be used to apply the same metal films. The electroless plating is considered to be a product by process limitation and even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.”, (*In re Thorpe*, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (*In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113).

The metal film of Komiyama is disclosed to be on at least the porous surface of the porous dielectric. (Col. 8 lines 55-65)

Additionally, if the terminology of the claim limitation requiring an “electroless plating film” is not a product-by-process limitation then the film of Komiyama is considered to be made of the same material as the Applicant’s film, therefore it is considered to act as an electroless plating film.

**Claims 1-5, 7, 9-11 and 13 are rejected under 35 U.S.C. 102(a) as being anticipated by Zakhidov (U.S. Pat. No. 6,261,469).**

**Consider claims 1-5, 7, 9-11 and 13,** Zakhidov discloses a three dimensional periodic structure with a structure that teaches graphite sheets can be oriented into a cubic diamond structure (with air being the other substance). Zakhidov also discloses that a conductive metal film of Au is applied to the structure by chemical vapor deposition, and the film of conductive material is preferably aggregated together (in the structure) to form a mechanically robust structure (with uncoated regions existing), thereby teaching the film in a particle or cluster form. (Col. 11, line 64-Col. 13, line 45) Additionally, in column 12 lines 62-68 and column 13 lines 1-5, Zakhidov discloses that the surfaces of the void structure are covered with a partial surface coating of infiltrated material (so that uncoated regions exist). By this additional teaching a clustered or discontinuous film of Au, a discontinuous film is considered to be taught on the surface of the periodic structure.

Zakhidov teaches the claimed structure with the same materials, therefore the resistivity and conductivity is also considered to be taught, because the same structure with the same materials would produce similar characteristics, such as resistivity and conductivity.

### ***Response to Arguments***

Applicant's arguments filed 12/1/2008 have been fully considered but they are not persuasive. The Applicant's arguments against the Komiyama reference is not

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persuasive because the applicant's arguments are not commensurate with the actual limitations. There is no specific pattern claimed by the applicant. The term "periodically" gives no concrete definition to any particular arrangement. Periodic can mean anything from being in a sporadic manner or reoccurring from time to time or appearing at regular intervals. Therefore, the disclosure in Komiyama meets the claim limitations due to the two substances being sporadically or intermittently distributed.

Regarding the electroless plating film, please see the rejection above.

Regarding the Applicant's arguments against Zakhidov, the Applicant is considered to have misquoted the prior art reference. Zakhidov specifically states that, "Patch templating is a type of templating where the surfaces of a void structure are covered with a **partial surface coating of the infiltrating material (so that uncoated regions exist)**". (Col. 12 lines 62-65, emphasis added). By this statement, Zakhidov distinctly discloses that it is known to have discontinuous, partial or patch coating of the infiltrated material, which is considered to be the conductive film. Therefore, the Zakhidov reference is considered to read upon the claimed invention.

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GORDON R. BALDWIN whose telephone number is (571)272-5166. The examiner can normally be reached on M-F 7:45-5:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GRB

/Timothy M. Speer/  
Primary Examiner  
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